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Application No.: 10/749,624

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REMARKS

Claims 1-5, 7-11, 13, 14, 16, and 21-23 are pending upon after amendment. Claims 6, 12, 15, and 17-20 have been canceled.

In the Office Action, the Examiner rejected claims 1, 2, and 5 under 35 U.S.C. § 102(b) as being anticipated by Lu et al.; rejected claims 17-20 under 35 U.S.C. § 102(a) as being anticipated by Yang et al.; rejected claims 3 and 4 under 35 U.S.C. § 103(a) as being unpatentable over Lu et al. in view of Yang et al.; rejected claim 7 under 35 U.S.C. § 103(a) as being unpatentable over Lu et al. in view of Eberle et al.; rejected claims 8, 9 and 11 under 35 U.S.C. § 103(a) as being unpatentable over Lu et al. in view of Han et al.; rejected claim 10 under 35 U.S.C. § 103(a) as being unpatentable over Lu et al. in view of Han et al. and Yang et al.; rejected claims 21-23 under 35 U.S.C. § 103(a) as being unpatentable over Yang et al. in view of Lu et al.; and stated that claims 6 and 12 would be allowable if rewritten in independent form.

The incorporation of the subject matter from allowable claim 6 into independent claim 1 should render all of claims 1-5 allowable.

Similarly, the incorporation of the subject matter from allowable claim 12 into independent claim 8 should render all of claims 8-11 allowable.

With regard to claims 13-16, Applicants first note that these claims were not rejected over art in pages 2-9 of the Office Action. Nonetheless, Applicants have incorporated subject matter from claim 15 into independent claim 13 that is similar to that indicated as allowable in

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claims 6 and 12. Thus, Applicants respectfully suggest that the incorporation of such subject matter also renders claims 13, 14, and 16 allowable.

A *prima facie* case of obviousness has not been established for claims 21-23 at least because the references as combined fail to teach or suggest all the claim limitations. Claims 21-23 require a method including, *inter alia*, "selecting a modulation scheme for the encoded information on one or more OFDM subcarriers based on the detected channel condition." The combination of Yang et al. and Lu et al. fails to teach or suggest at least these limitations.

As acknowledged on page 7 of the Office Action, Yang et al. fails to teach or suggest selecting a modulation scheme for the encoded information on one or more OFDM subcarriers based on the detected channel condition as claimed. The cited portion of Lu et al. also fails to teach or suggest these limitations. In particular, page 76, section III, of Lu et al. only discloses that the instantaneous channel capacity may be maximized by "water-filling." See also page 78, paragraph 1, which summarizes Section III. It does not teach or suggest selecting a modulation scheme for the encoded information on one or more OFDM subcarriers based on the detected channel condition, as required by claims 21-23.

In any event, neither reference teaches or suggests "selecting a modulation scheme for a group of two or more OFDM subcarriers based upon a detected channel condition for at least one of the two or more OFDM subcarriers" as set forth in claim 22

Thus, a *prima facie* case of obviousness has not been established for claims 21-23, and the 35 U.S.C. § 103(a) rejection should be withdrawn.

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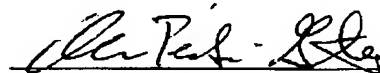
Reconsideration and allowance of pending claims 1-5, 7-11, 13, 14, 16, and 21-23 are respectfully requested.

In the event that any outstanding matters remain in this application, Applicants request that the Examiner contact Alan Pedersen-Giles at the number below to discuss such matters.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-0221 and please credit any excess fees to such deposit account.

Respectfully submitted,

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